Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band	)	GN Docket No. 12-354

REPLY COMMENTS OF VERIZON AND VERIZON WIRELESS

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April 5, 2013

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SUMMARY AND INTRODUCTION

Clearing new spectrum and making it available for wireless broadband use should be the Commission's principal strategy to enable wireless operators to continue to invest billions to provide consumers with an expanding array of innovative products and services. But given the infeasibility of clearing federal government operations from the 3.5 GHz spectrum, Verizon supports the Commission's proposal to authorize private sector use of the band subject to rules that protect government operations from interference.[1]

By apportioning the 3.5 GHz band between unlicensed and licensed regimes, the Commission can dedicate substantial additional spectrum for unlicensed use, which will support a robust unlicensed ecosystem, while also promoting new infrastructure deployment and services by companies whose investment relies on the traditional licensing model. Unlicensed operations have their place in the overall wireless ecosystem, and Verizon supports dedicating a portion of the 3.5 GHz band exclusively to unlicensed users, who can access the spectrum at no cost for Wi-Fi or any other innovative use. The 3.5 GHz band is also attractive to wireless operators for

[1] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Docket No. 12-354, Notice of Proposed Rulemaking and Order, 27 FCC Rcd. 15594 (2012) ("NPRM").

licensed LTE small cell deployment as well as other uses, so a framework that promotes investment by such operators has the potential to create enormous consumer benefits. Therefore, for the portion of the band not dedicated to unlicensed use, the Commission should adopt T-Mobile's exclusive-use licensing proposal. That traditional licensing framework has supported substantial infrastructure investment by wireless operators which in turn has benefited the public and the U.S. economy, and continuing to employ it here will support additional investment.

If, however, the Commission chooses to adopt a multi-tiered model with respect to some portion of the 3.5 GHz band, it should not disregard the spectrum lessons of the past decades. One is that wireless operators require quality-of-service assurances if they are to make substantial investments in reliance on spectrum. Another is that assigning licenses to entities based on open eligibility rules, not subjective eligibility criteria, ensures that the spectrum is put to its highest and best use and avoids unnecessary economic distortions and inefficiencies. A multi-tiered sharing model faithful to those bedrock policy principles could combine the features of an essentially unlicensed regime (i.e., licensed by rule) with the certainty necessary for wireless operators to make investments in reliance on the continued availability of this spectrum.

Regardless of the licensing regime adopted, the Commission can improve the chances this experiment will succeed by providing more certainty about incumbent Government users' relationship to private sector users. The Commission should focus in particular on working with the appropriate Government agencies to clarify – and minimize – the size of the exclusion zones where private sector operations will not be permitted because of the need to protect Government operations from interference, and to provide the private sector with the information needed so it assess the interference risks created by Government operations. And, because small cells hold tremendous promise for expanding wireless broadband services in the most congested parts of

the nation, the Commission should take additional actions to facilitate small cell deployment. These actions are needed to remove regulatory barriers that currently impede rapid deployment of small cells in areas where the need to address growing consumer demand for wireless broadband is particularly acute.

I. THE COMMISSION SHOULD DIVIDE THE 3.5 GHz BAND BETWEEN UNLICENSED AND LICENSED USE.

The Commission should combine the 3.5 GHz band with the 50 MHz of spectrum between 3650 and 3700 MHz, and thus make a total of 150 MHz of spectrum available for commercial use, subject to interference protections for incumbent government users. That provides the Commission with an opportunity to make substantial amounts of spectrum available on a secondary basis for both unlicensed and licensed uses. The best policy for ensuring that the spectrum is efficiently put to use to the benefit of consumers is to apportion the available spectrum between those two established regulatory paradigms.

A. Dedicating Part of the 3.5 GHz Band to Unlicensed Use Will Enable the Deployment of Wi-Fi and Other Innovative Services in that Band.

Verizon supports dedicating a large portion of the spectrum between 3550 and 3700 MHz to unlicensed use under Part 15 on a secondary basis. Doing so would enable an unlimited number of wireless ecosystem stakeholders to deploy Wi-Fi and other innovative technologies in this spectrum, as long as their devices comply with rules that protect incumbent government operations. Commenters indicate that a diverse array of stakeholders would take advantage of the opportunities presented by the creation of a new robust unlicensed ecosystem in the 3.5 GHz band.[2] Making part of that band available for unlicensed use will supplement other actions the

[2] *See, e.g.*, Public Interest Spectrum Coalition ("PISC") Comments at 10-11; National Cable & Telecommunications Association Comments at 6-9.

Commission has taken or is in the process of taking to promote unlicensed uses, such as its recent NPRM seeking comment on allocating an additional 195 MHz of unlicensed spectrum in the 5 GHz band, by providing even more capacity for unlicensed operations.

B. Dedicating the Rest of the Band to Licensed Use Will Promote LTE and Other Infrastructural Investment.

The 3.5 GHz band is attractive to wireless operators for small cell deployment as part of heterogeneous LTE networks because of the capacity gains that can be achieved, even using low-powered operations.[3] The spectrum is also useful to wireless operators for other applications, such as non-line-of-sight backhaul.[4] Given the potential for this band to support investments by wireless operators to deploy new and expanded services to consumers, Verizon supports T-Mobile's proposal to auction a portion of the 3.5 GHz band for secondary exclusive use.

T-Mobile correctly states that wireless carriers can make "greater use of the spectrum for broadband capacity if that spectrum is made available to them on an exclusive basis through licensing."[5] The Commission's decisions starting in the 1990's to assign spectrum under a flexible, exclusive-use framework have been extraordinarily successful, providing the foundation for tens of billions of dollars in wireless infrastructure that has delivered major benefits to consumers and the economy.[6] Although the continued presence of government incumbents in the 3.5 GHz band make it impossible to adopt this traditional framework in full, Verizon supports dedicating a portion of the band to a geographic-area licensing model that approximates

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[3] *See, e.g.*, T-Mobile Comments at 4-5; Qualcomm Comments at 18.

[4] *See, e.g.*, T-Mobile Comments at 5.

[5] *Id.* at 4.

[6] Chairman Genachowski observed during the 3.5 GHz Band Workshop on March 13, 2013, that the exclusive-use licensing model has been highly successful.

the Commission's successful licensing model, i.e., one that ensures licensees can invest in infrastructure in their service areas without the threat of harmful interference.

Verizon Wireless alone has invested more than *$80 billion* in network infrastructure since 2000. This investment relied, in part, on the Commission's exclusive-use licensing regime that protected Verizon's ability to use the spectrum, without the risk that other users would degrade Verizon's network reliability. By contrast, it is difficult to imagine a wireless operator making large investments in infrastructure absent strong interference protections; the risk the investment will become impaired in the future is simply too high.

The Commission recently observed that LTE deployment by Verizon and other wireless operators, which was done under the flexible, exclusive-use licensing framework, has been transformative:

> On the mobile front, change is accelerating. Providers have continued to expand their coverage, but are also deploying new, faster, and more spectrally-efficient mobile network technologies, most notably Long Term Evolution (LTE), which offers advertised download speeds as high as 5-12 Mbps. In the summer of 2010, there was no LTE deployment in the United States. Just 18 months later, in January 2012, three mobile wireless providers had launched LTE networks, and best available estimates are that these LTE networks (combined) covered 211 million people.[7]

The 3.5 GHz band is a valuable resource for wireless operators precisely because it can support the investment needed to continue that growth in advanced wireless services.[8] Given the

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[7] *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 11-121, Eighth Broadband Progress Report, 27 FCC Rcd 10342, ¶ 6 (2012) (internal quotations omitted).

[8] *See, e.g.*, T-Mobile Comments at 4 ("[l]icensed spectrum provides significantly greater certainty, allowing more complete integration into carrier networks using LTE technology for both wide-area cells and small cells"). During the workshop held in this docket on March 13, 2013, some participants incorrectly suggested that LTE protocols may not be a preferred technology for small cell deployment.

attractiveness of the 3.5 GHz band to wireless operators and the success of the flexible, exclusive-use model, Verizon supports dedicating part of the 3.5 GHz band to that proven model.

II. IF THE COMMISSION CHOOSES TO EXPERIMENT WITH A MULTI-TIER FRAMEWORK, THE MODEL SHOULD AVOID DISCOURAGING INFRASTRUCTURE INVESTMENT.

One of the Commission's stated goals in this proceeding is to explore a potential multi-tier licensing model consistent with the PCAST Report's recommendations.[9] But adopting a hierarchy of access rights with overly-complex protection criteria may create a system that fails to serve the spectrum needs of any party. Potential users that may otherwise innovate and invest under an unlicensed regime would be burdened by having to comply with various protocols and device certification standards required to implement the multi-tier framework, which would likely drive up the cost of devices. The Public Interest Spectrum Coalition, for example, states that its members are "extremely reluctant" to see a multi-tier experiment in the 3.5 GHz band because of the problems it may cause for what the Coalition views as the band's "very promising" opportunities for unlicensed use.[10]

Wireless operators that would otherwise deploy infrastructure under an exclusive-use licensing model may also find that the interference risks from a sub-tier of "opportunistic" users are too great to risk investment in this spectrum. Those risks are multiplied by the fact that future new entrants to the opportunistic Tier 3 may deploy new technical models in the same

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That is wrong. The 3GPP Release 12 standard is specifically developed for small cell enhancements to LTE networks, and it supports highly intensive use of spectrum in a small cell small environment.

[9] *See* Executive Office of the President, President's Council of Advisors on Science and Technology, *Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth*, at 22-27 (2012) ("PCAST Report"), *available at* http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf.

[10] *See* PISC Comments at 18.

unlicensed spectrum presenting interference, co-existence, database security risks, and device model control risks that are not easily defined or understood, creating further disincentives for future investment.

In short, rather than creating the best of both worlds, a multi-tiered model may degrade the viability of both the unlicensed and licensed regimes, creating the worst of both worlds: risk for present technologies' deployment and also disincentives for future investment. If the Commission nevertheless chooses to pursue this model, it should modify its proposed framework to avoid deterring investment by companies for which quality-of-service assurances are important.

A. The Commission Should Embrace Open Eligibility Principles.

The NPRM proposes three tiers of access in the 3.5 GHz band: (1) Incumbent Access; (2) Priority Access; and (3) General Authorized Access ("GAA"). Under this approach, Priority Access users would be protected from harmful interference from the same or lower tier of users, allowing the Priority Access user to offer quality-assured services. The Commission further proposes limiting eligibility to the Priority Access tier to a "class" of "critical users"[11] such as "hospitals, utilities, state and local governments, and/or other users with a distinct need for reliable, prioritized access to broadband spectrum at specific, localized facilities."[12]

The Commission should allow *all* interested entities to seek to acquire spectrum in this band. Limiting the eligibility to offer quality-assured services to a particular set of uses or users would lead to underinvestment in network infrastructure and consumer devices. The Commission has correctly shifted away from the "command-and-control" approach to spectrum

[11] NPRM, ¶ 73.

[12] *Id.*, ¶ 9.

management, replacing it with flexible-use rules that avoid subjective judgments about which entities are most "deserving" of spectrum.[13] Any attempt to enshrine in regulation a preferred class of use or users deserving of Priority Access licenses would be a step backward in spectrum policy and would harm the public interest by keeping a valuable resource out of the hands of those who value it most and are most likely to use it productively to the benefit of consumers. Instead, the Commission should allow any entity in need of quality-of service—including commercial wireless operators—to be eligible to hold licenses in the 3.5 GHz band.

B. Without a Highly Reliable Spectrum Access System and a Robust Device Certification and Registration Process, Interference from GAA Devices Would Impair Priority Tier Licenses.

The success or failure of any sharing experiment will hinge on how effective the spectrum access system ("SAS") database is, how robust the procedures are to certify and register devices, how well defined the GAA alternative technical use models are in terms of critical parameters, and how effective the Commission's enforcement regime is with respect to noncompliant devices and uses. While the usefulness (and value) of a priority license that requires sharing with GAA users will always be lower than that of an exclusive-use license, one fact is clear: the less reliable the protections from GAA users, the less useful (and valuable) the priority license will be. There are numerous potential problems – ranging from software bugs to defective GPS chips to unauthorized efforts to circumvent device standards via reprogramming controlling software and firmware – that could potentially destroy the quality-of-service assurances that Priority users have with respect to GAA devices, and thus impair Priority licenses.

[13] *See* Spectrum Policy Task Force Report, ET Docket No. 02-135 (November 2002), at 16, 41.

The risks to Priority licensees' operations would likely deter potential investment unless the SAS database is based on simple, proven technology, such as the white spaces model of creating sufficient spatial separation between GAA users and the coverage contours of deployed priority facilities. There would also need to be strong certification and registration requirements to ensure GAA-authorized devices meet standards ensuring they can communicate effectively with the SAS, that they meet appropriate power limitations, and that their precise locations are known to the SAS at all times. Robust enforcement – including tracking down users of any unregistered or noncompliant devices – would also be crucial to ensuring the success of the experiment. The Commission should also consider protocols providing protections beyond those of the white spaces framework, such as the use of pilots (i.e., requiring that mobile GAA devices need to confirm the absence of a pilot before radiating). And to facilitate effective enforcement, the Commission should ensure that each GAA device be identifiable via a unique registration number, and should consider requiring it to transmit a beacon signal when operating so that any noncompliant use can be efficiently detected and remedied.

C. Addressing Mutual Exclusivity (To the Extent it Arises in Some Markets) with a Streamlined Auction Mechanism Would Benefit Consumers and Promote Efficiency.

Where mutually exclusive applications are not received, which is likely to be the case in many areas, including rural zones where wireless operators are unlikely to undertake substantial small cell deployments, interested parties such as wireless Internet service providers could be awarded Priority licenses for a low fee or at no cost. In other areas, including dense urban zones where operators want to deploy cells to support intensive consumer demand for broadband, there will likely be numerous operators interested in obtaining a finite number of Priority licenses. To the extent the Commission receives mutually exclusive requests, it should employ a streamlined

auction mechanism that facilitates rapid license assignment and deployment by Priority licensees. An auction is required under Section 309(j) in these circumstances, and would in any event be sound policy, because it would permit the Commission to "apply market forces to the assignment of spectrum licenses, helping to ensure that spectrum is put to its most productive use."[14]

Attempts to avoid mutual exclusivity through "license by rule" or "license lite" frameworks are inconsistent with providing the quality-of-services assurances that are needed to support investment by Priority licensees. The Wireless Internet Service Provider Association ("WISPA") states that its members have been able to work cooperatively with one another to avoid causing interference to one another,[15] but mandating a cooperation requirement would not provide a wireless provider with certainty that it can deploy infrastructure in a particular area and rely on that investment to provide reliable service to its customers. The Commission has made clear that the rules for the 3650-3700 band do not provide *any* quality of service assurances to companies that have deployed facilities, finding that a company seeking to serve an area that is already being served has "equal" rights to the same spectrum.[16] Also, as discussed, "license by rule" or "license lite" frameworks can create future potential non-compliance or interference issues when such frameworks lack well defined usage, technical and control parameters.

Other approaches to avoid auctions in cases where numerous parties are interested in obtaining a finite number of licenses are equally defective. For example, although the overall "secondary exclusive" concept proposed by Google has merit to the extent the Commission

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[14] *See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Docket No. 12-268, Notice of Proposed Rulemaking, 27 FCC Rcd 11710, ¶24 (2012).

[15] *See* WISPA Comments at 2.

[16] *In Re. WORLD DATA PR INC.*, Memorandum Opinion & Order, FCC 11-21, 26 FCC Rcd 2360, ¶ 8 (2011).

chooses to pursue a multi-tier model, Google's "first come, first served" proposal[17] is unlikely to work in practice. In high-traffic urban zones, numerous entities may be interested in obtaining the right to build facilities that have interference protections, so there would likely be a rush to the Commission to register such facilities – and the number of registrations would outnumber the number of licenses available.[18] Instead, the Commission should not deviate from the past learning establishing the superiority of using auctions to resolve situations, to the extent they occur, where the Commission receives mutually exclusive applications.

III. THE COMMISSION SHOULD DEVELOP A MECHANISM TO PROMOTE FUTURE CLEARING OF GOVERNMENT USE AND ALSO CLARIFY HOW SHARING WITH GOVERNMENT USERS WILL WORK.

As the NPRM observes, the demand for wireless broadband is expanding at a tremendous rate, with some experts forecasting a "need for a thousand-fold increase in wireless capacity by 2020."[19] Regardless of the potential of government-private sector spectrum sharing, spectrum that is dedicated to private sector use is far more capable of meeting that exploding rise in consumer demand. As Nokia states, "cleared, exclusively-licensed spectrum suitable for mobile networks" should be "the absolute top objective if the United States is to maintain a leading position in advanced mobile networks and succeed in connecting and upgrading all of its citizens with the necessary digital tools of the 21st century."[20]

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[17] *See* Google Comments at 6.

[18] Verizon agrees with Google that if the Commission pursues a multi-tier model, it should issue Priority licenses for blocks of at least 20 MHz each (Google Comments at 8). Accordingly, the number of licenses would be limited.

[19] *See* NPRM, ¶ 2. A recent study found that mobile network connection speeds more than doubled in 2012 and that 4G connections generate 19 times more traffic on average than non-4G connections. *See* Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2012–2017 at 1-2 (Feb. 6, 2013), *available at* http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html.

[20] Nokia Comments at 4.

Of course, in some cases the prospects of clearing government operations from shared bands will be low. That may be the case here because of the specialized nature of the Defense Department's radar operations using the 3.5 GHz band. But as a general matter government agencies can (and should) clear additional spectrum by strengthening the spectrum management processes.[21] When establishing sharing arrangements, the Commission should establish clear and more formal processes under which it will work with NTIA to explore and promote future clearing so that at least some portion of the shared spectrum may at some point be available for dedicated private sector use.

It is equally important that the Commission take steps now to reduce uncertainty about the Government's role as sharing partner. The Commission states that it intends to "work closely with NTIA and relevant federal agencies to perform necessary further analysis."[22] The results of that dialogue will be crucial because, regardless of the licensing framework established, more certainty about how the government will comport itself as sharing partner will increase the prospects that private sector firms will rely on the availability of 3.5 MHz spectrum to make investments in devices and infrastructure. The NPRM is silent both regarding the government's expected needs for the spectrum and the incentives (if any) that will be in place for the government users to choose to share the spectrum in ways that accommodate meaningful private sector use, or to choose to vacate the spectrum entirely if their usage and/or technical models preclude sharing. For example, it is unclear what power levels will be acceptable, how large

[21] *See* U.S. Government Accountability Office, *Spectrum Management: NTIA Planning and Processes Need Strengthening to Promote the Efficient Use of Spectrum by Federal Agencies* (2011), *available at* www.gao.gov/new.items/d11352.pdf.

[22] NPRM, ¶ 13.

exclusion zones would need to be, and how and under what circumstances the government might operate outside the exclusion zones.[23]

Greater certainty about the minimal size of the exclusion zones is particularly important. The exclusion zone estimates in the NPRM would exclude approximately 60 percent of the U.S. population[24], so shrinking them would obviously increase the usefulness and value of the spectrum to the private sector because it could be used to cover a larger number of markets. First, the Commission should re-calculate the exclusion zones based on the parameters associated with small cell deployment (as opposed to the macro cell assumptions in the PCAST Report). That calculation should be based on protecting incumbent operators from private sector operations, not vice versa. If the Commission verifies the calculations Qualcomm provided based on those assumptions, it should publish its findings confirming that the exclusion zones can be substantially reduced, i.e., to approximately 10 miles.[25]

Second, as Qualcomm and others note, it is crucial for the Commission to provide additional information about where, when, and how Defense Department radar can be expected to be used.[26] Although Commission-imposed exclusion zones should be based on interference risks from private operators to incumbent government operations, private sector operators will need to understand well the interference risks that incumbent systems would pose to their own operations. Providing information about government uses of the 3.5 GHz band will enable the private sector to assess the business case for investing in reliance on the band, either under current rules or anticipated future rules.

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[23] *See, e.g.*, NPRM, ¶¶ 8, 66-68.

[24] *Id.,* ¶ 67.

[25] *See* Qualcomm Comments at 16-17.

[26] *Id.* at 17-18.

IV. THE COMMISSION SHOULD TAKE ACTIONS TO PROMOTE AND EXPEDITE SMALL CELL DEPLOYMENT.

Verizon commends the Commission for all of the actions it has taken over the past several years to remove obstacles to wireless facilities siting and to improve carriers' ability to deploy new wireless broadband facilities. The Commission has also demonstrated a focus on small cell and Distributed Antenna System ("DAS") deployment issues, including announcing its intention to further streamline the siting process for small cell and DAS facilities.[27] As the NPRM recognizes, small cells are likely to be heavily used in the 3.5 GHz band because of the limited propagation characteristics of that spectrum. There are several actions the Commission should take to facilitate wireless small cell and DAS deployment that will in turn promote more robust development of this spectrum.

First, the Commission should make clear that the categorical exclusion from National Environmental Policy Act ("NEPA") evaluations for environmental issues other than radiofrequency emissions and historic preservation set forth in Note 1 to Section 1.1306 of the Commission's rules[28] applies to antennas mounted on existing structures other than buildings or antenna towers. Small cells and DAS antennas will frequently be mounted on existing structures such as light poles, street signs, bill boards, and utility poles, and these antennas will not

[27] *See Wireless Telecommunications Bureau Announces Workshop Agenda: Augmenting Mobile Broadband in Your Community An Overview of Distributed Antenna Systems and Small Cell Solutions,* Public Notice, 27 FCC Rcd 447 (2012); *FCC Chairman Julius Genachowski Announces New Broadband Acceleration Initiative Actions; Clarifies Rules to Speed Wireless Infrastructure Deployment; Moves to Expedite Temporary Cell Towers*, News Release (Jan. 25, 2013) ("Broadband Acceleration News Release") (announcing actions in the coming months to further streamline DAS and small cell deployment).

[28] 47 C.F.R. §1.1306, Note 1.

significantly impact the environment. Thus, the Commission can foster small cell deployment by making clear that NEPA evaluation is not required.[29]

Second, the Commission should exempt small cells and DAS antennas mounted on existing structures from requirements to review the impacts such antennas may have on historic properties and Tribal religious sites.[30] Because small cells and DAS antennas will typically be mounted on existing structures, they are extremely unlikely to significantly impact historic properties or Tribal religious sites.[31]

Third, the Commission should take steps to exclude small cell and DAS facilities from State and local zoning processes. Verizon notes, in this regard, that Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012,[32] as recently interpreted by the Wireless Telecommunications Bureau,[33] may not apply to antennas mounted on existing structures that do not already support wireless facilities or equipment. Accordingly, some State or local zoning authorities may continue to conduct zoning reviews and deny zoning approval of some proposed small cell and DAS facility sites. The Commission should take actions to close this potential loophole in the law. In particular, the Commission should (1) further interpret Section 6409(a) to

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[29] *See* Letter from Tamara Preiss, Verizon to Marlene H. Dortch, Secretary, FCC, WC Docket No. 11-59, filed February 28, 2013 ("Verizon Infrastructure Letter"), at 2; U.S. Congress Hearing Before the Senate Committee on Commerce, Science and Transportation, *Oversight of the Federal Communications Commission, Hearing Before the Committee on Commerce, Science, and Transportation of the United States Senate*, Statement of Ajit Pai, Commissioner, Federal Communications Commission, March 12, 2013, at 8 ("Commissioner Pai Statement").

[30] *See* 47 C.F.R. § 1.1307(a)(4) and (5).

[31] *See* Verizon Infrastructure Letter at 2; Letter from D. Zachary Champ, PCIA to Marlene H. Dortch, Secretary, FCC, WC Docket No. 11-59, filed March 19, 2013 (attaching Amos J. Loveday, Ph.D., "DAS/Small Cells & Historic Preservation: An Analysis of the Impact of Historic Preservation Rules on Distributed Antenna Systems and Small Cell Deployment," February 27, 2013); Commissioner Pai Statement at 8.

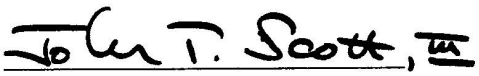
[32] Pub. L. No. 112-96, § 6409(a) (codified at 47 U.S.C. § 1455).

[33] *See Wireless Telecommunications Bureau Offers Guidance on Interpretation of Section 6409(a)* of *the Middle Class Tax Relief and Job Creation Act of 2012*, Public Notice, 28 FCC Rcd 1 (Jan. 25, 2013).

make clear that modifications of base stations, as that term is used in the statute, encompass collocations on buildings and other structures, even if those structures do not currently house wireless communications equipment;[34] and (2) include a small cell and DAS exemption in its promised action to adopt model facilities siting rules for localities.[35]

Fourth, the Commission should encourage the Federal Properties Working Group charged with implementing the Executive Order on accelerating broadband infrastructure deployment on Federal properties[36] to take steps to streamline and improve the process for locating small cells and DAS antennas on Federal properties. These steps should include adopting policies directing agencies to facilitate small cells and DAS antennas, uniform lease agreements and fee schedules, and short timelines for approving such deployments.[37]

Respectfully submitted,



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April 5, 2013

[34] *See* Verizon Infrastructure Letter, at 2.

[35] *See* Broadband Acceleration News Release.

[36] *See* Exec. Order No. 13,616, 77 Fed. Reg. 36,903 (2012).

[37] *See* Verizon Infrastructure Letter, at 3-4.